

NOTES ON BUILDING COSTS FOR ARGONNE 12-FT BUBBLE CHAMBER  
AND SECOND PROTON AREA\*

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This facility includes a Proton Building situated next to the ZGS ring, 100' x 140' for the emergent proton beam, target and beginning of beam; a concrete pad, 35' x 290' for beam transport (covered by concrete block shielding tunnel); a Bubble Chamber building, 70' x 70' with attached control room, 30' x 60', two compressor houses 40' x 65' and 40' x 35' and fire and water pump room 30' x 30'. See drawing.

Proton Building

This 100' x 140' building, 42' high, has a 35-T crane and about 4 MVA installed power--2.5 for beam transport and about 1.5 for services. (Note that there is no extra power installed for more beams).

Cost, including crane, power distribution and water distribution is about \$53.3/sq. ft.

Bubble Chamber Building

This 70' x 70' building, 51' high, has a 100 T crane of special construction for hydrogen safety, has about 4 MVA power for use of compressors, fans, pumps, etc. A concrete wall (1' thick) separates it from auxiliary buildings. It

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Information received from B. Krause and R. Loewe, A.N.L.

is just sufficient for the chamber and necessary surrounding space for repair and maintenance.

Cost, not including crane, about \$85/sq. ft. (\$1.97/cu.ft.).

Krause estimates that a similar building of area 150' x 150' might be reduced to about \$75/sq. ft.

Special crane, this span, is 160 k\$.

Since the compressors are not water cooled, and the beam transport power supplies are air cooled, the total cooling capacity is figured as only about 5 MW.

#### Beam Pad

Power and water are brought in overhead on stanchions (about 15' high). Power cables are connected to terminal boxes located near where magnets are to be placed. Water pipes run outdoors, electrically heated, hoses to, magnets expected to be O.K. if water flows continually but can also have electric tracer line.

Some sheds will be used, cost about k\$15-20 for 20' x 24', including light, heat, some water.

